Continuous Improvement: Using Collaboration Between Technical Services, IT, and Public Services to Make an Impact

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Georgia Tech's Library Next Initiative – A Model for Collaboration:

Through a multi-year transformative effort known as Library Next, the Georgia Tech Library ("Library") underwent a significant organizational restructuring, offering the authors of this chapter the opportunity to engage in cross-functional teams and actively participate in projects outside of their "traditional" areas.

Georgia Tech is a public research university in the metro Atlanta area. It enrolls 32,722 students in undergraduate, graduate, and doctoral programs. With an eye towards supporting the shifting needs of our campus community, The Library Next initiative began in 2013 and aimed to radically change the traditional academic library model. The former dean, Catherine Murray-Rust stated: "*The biggest challenge to our transformation was organizational".* To achieve this transformation the library adopted *"…techniques used in disciplines such as supply chain thinking and portfolio management to radically restructure the way we operate."*[1]

According to the Project Management Institute (PMI), "organizational leaders initiate projects in response to factors acting upon their organizations."[2] At the Georgia Tech Library, three factors led to the initiation of Library Next:

1. Dwindling use of print collections
2. Rising use of electronic collections
3. Decreased in-person visits to the library

Realizing the growing need to respond to these trends, the Library moved its physical collections off campus and turned its focus to virtual collections and services. In 2019, 99.6% of collections use was electronic, averaging 4.89 million downloads from more than 1.97 million e-journals and e-books covering virtually every conceivable topic of scholarship. The infographic, included in the Library 2019 Impact Report, (Figure 1) was created to explain the physical collection move and provides a good visual representation of a tremendous shift in both the composition of the library collection and the use of library resources.[3]

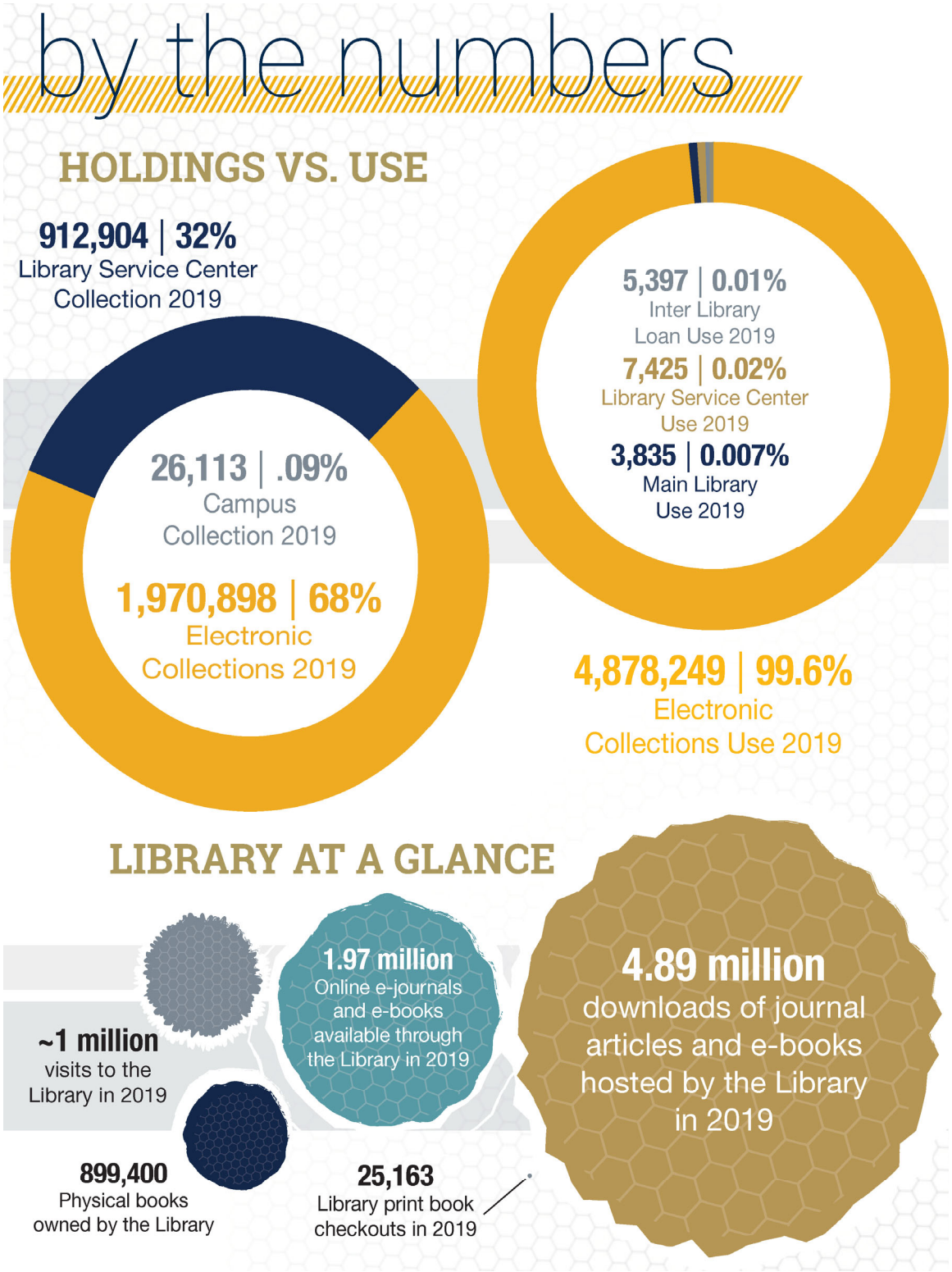

Figure 1 - Infographic showing the shift in both the composition of the Georgia Tech Library's collection and the use of library resources.

To help envision next-generation library services, the Library collaborated with Brightspot Strategy on a multi-part user research study. Brightspot facilitated the user research process and enabled the Library to develop a new vision for the 21st century research library. This vision required the reimagining of library spaces and services. Among these were virtual browsing environments for exploration and serendipitous discovery of materials for research and scholarship; an online presence that meets users where they are, both on and off campus; and an increase in self-service options for users. The new services coupled with no traditional physical collection in the library building required a new organizational structure and management strategies that emphasized

cross-functional collaborations. To succeed, library faculty and staff who work with patrons rely more heavily on their colleagues in technical services and IT to help users navigate to the resources they need. Likewise, the faculty and staff who work behind the scenes to maintain collections and support the digital environment depend on their peers in public services to facilitate feedback gathering and educating library staff and users on new technologies.

Following this work with Brightspot, the Library partnered with Georgia Tech Strategic Consulting (GTSC) to implement a portfolio management process. This process helped cultivate collaboration throughout the organization and facilitated the successful implementation of new services.

The methodology of portfolio management is defined by PMI as a centralized management system where the portfolio is a collection of "projects, programs, subsidiary portfolios, and operations managed as a group to achieve strategic objectives."[4] Library Next Portfolio projects followed a similar arc from start to finish, through a distinct set of phases:

- **Need identified** - the initial need to embark on a project, defined by organizational leadership in response to factors such as a request from external stakeholders, an opportunity to improve business processes, or an external change such as a new technology. Often the need is defined through a systematic needs' analysis.
- **Project charter** - this document defines the scope of the project, the project team, the timeline for deliverables, and any identified risks or issues that might complicate the project, along with supporting information such as a business case, goals, and objectives.
- **Data gathering** - during the planning phase, data gathering techniques such as brainstorming, focus groups, interviews, surveys, and so on can inform the outputs of the project.
- **Data analysis** - subject matter expert(s) analyze the data gathered and offer recommendations.
- **Implementation** - the project manager and team act on the recommendations and perform work to produce deliverables and meet objectives of the project.
- **Communication** - communication planning can address the numerous communication needs for a project: upwards, from the project to the portfolio; outwards, from the project to stakeholders; and within, between the project manager and the team. Communication planning addresses communication methods, technologies, strategies, and methods.
- **Feedback gathering** - near the completion or at the close of the project, feedback from the project team, stakeholders, and organizational leadership can provide information such as lessons learned, recommendations, remaining issues, and plans to monitor the post-project phase of work.
- **Identify new needs from feedback (and start again from the top)** - any new needs identified at the close of one project can inform subsequent projects.

The Library's portfolio process focuses on the tactical, daily execution of Library and Georgia Tech strategic initiatives. This process has fostered consistency, accountability and efficient implementation of new ideas for improvement and innovation. The Library 2019 Impact Report offers a visual representation of the of library involvement with the portfolio framework and the level of staff engagement with portfolio projects (Figure 2).[5]

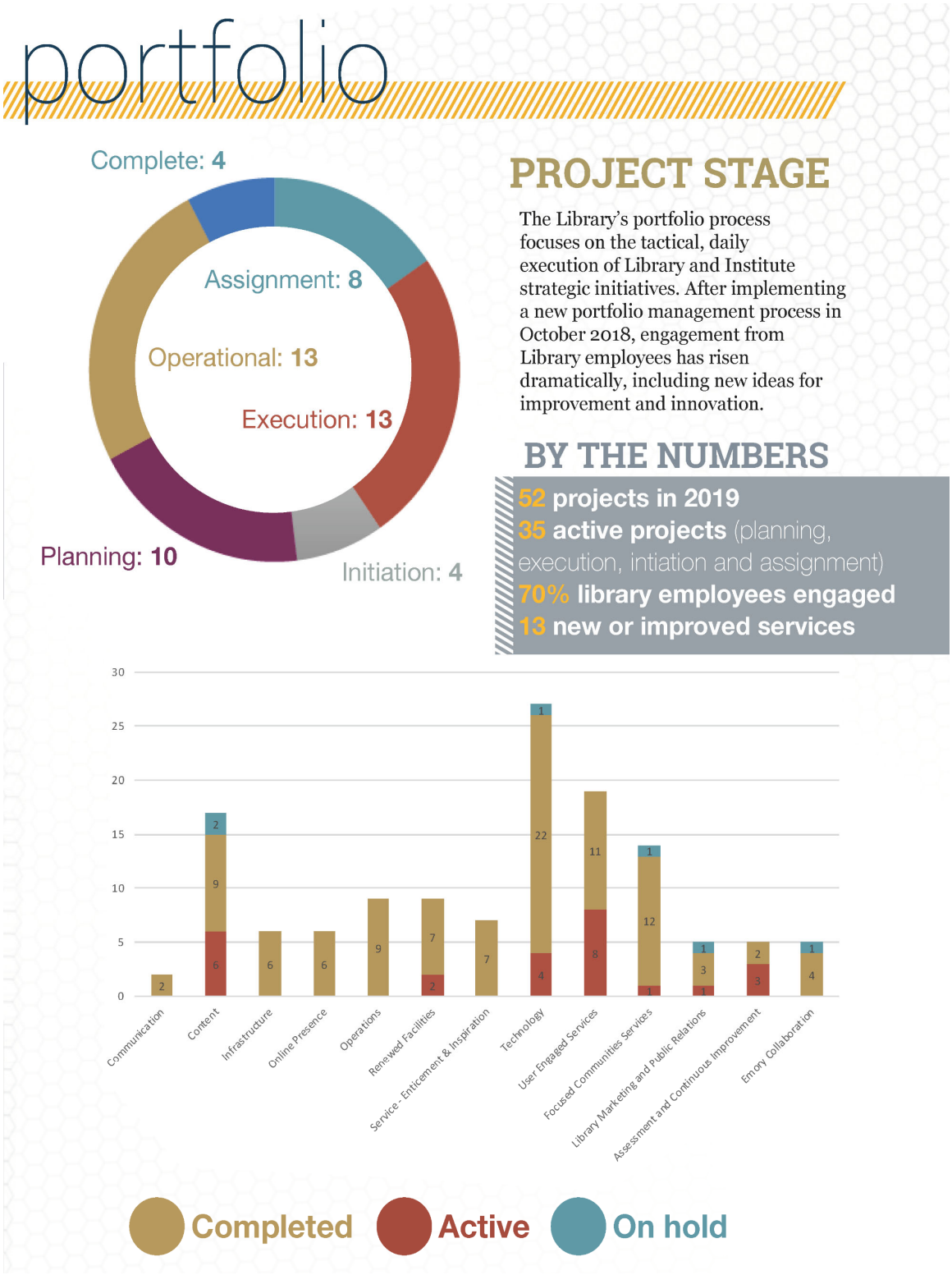

Figure 2 – Infographic illustrating the Library's involvement with the portfolio framework and the level of staff engagement with portfolio projects.

The Library Next projects are prioritized based on strategic alignment, resource availability, and overall value. All of them require a cross-functional team of people with expertise in different areas for successful completion. The projects in this case study were three out of over sixty initial projects under the portfolio. In all three, the librarians with technical services and IT backgrounds combined their project management expertise with the outreach and instruction skills of their colleagues in

public services in collaborative endeavors to introduce improved online services to users. The projects are:

1. Virtual browsing of print and electronic books in the library catalog with Syndetics Unbound
2. Enhancements to the discovery interface (ExLibris Primo) to help students more easily locate resources for their classwork and scholarship
3. Single sign-on authentication for licensed content through OpenAthens

These projects share:

- The use of the portfolio management framework described above
- Active participation of cross-functional teams consisting of technical services, public services, and IT staff in all stages of the projects
- Active user feedback gathering to recalibrate project goals and deliverables

All participants agree that combining these elements leads to successful projects with the most positive impact on user services and the library operation.

Library Next Project 1 - Virtual Browsing:

One of the first key Library Next project collaborations between technical services, IT, and public services was the virtual browsing initiative. The exploration of a virtual browsing solution began in late 2014 after the announcement that most of the Library's physical collection would be moved to an off-site storage facility.

As a commitment to the Georgia Tech faculty, the Library was tasked with figuring out a way for users to simulate browsing the shelves in an online environment since the ability to browse the physical shelves would no longer be available. A virtual browsing task force consisting of librarians, IT, and technical and public services staff was formed. The task force polled peer institutions and researched projects tackling the journey of serendipitously discovering materials in an online environment. The work of the task force was also informed by the publication of a student research paper on virtual browsing which addressed the evolution of media and design mentality and discussed alternatives and implementation options. The paper concludes, "with all of the changes and evolution that will come to the Georgia Tech Library, virtual browsing is arguably one of the most influential, affecting students both in and out of the library." The paper goes on to state, "it will once again be possible to achieve serendipity when browsing, although the mode of access may be different."[6]

By late 2016, the Library Next portfolio had launched, and a virtual browsing project was officially initiated as part of the portfolio. The research and recommendations compiled by the task force served as key inputs for the project. The project started with a conceptual white paper and internal library discussions about the role of browsing in a primarily digital library. The paper's abstract reads, "in order to recreate one of the qualities of collection browsing that is lost by relocating the physical collection off-site, the Library should provide a recommendation service that can provide the kind of serendipitous search results that patrons have identified as critical-to-quality in their browsing."[7]

With the needs identified and the data gathered and analyzed, it was time to identify and implement a solution. Developing an in-house platform utilizing Georgia Tech's own engineering and computer-programing expertise was briefly considered, but true to portfolio management principles, based on available human and budgetary resources as well as desired timeline, the

Library decided the implementation of an existing commercial product would be a better path forward.

During phase 2 of the project, a group of librarians from technical services and IT evaluated a variety of products from different vendors using the following criteria established in the data gathering from phase 1:

- Affordability
- Support
- Ease of implementation
- Integration with Primo
- Ease of maintenance
- Similarity to traditional physical browsing
- E-books integration

The evaluation resulted in the selection of Syndetics Unbound for a trial subscription. The team used the trial to collect user feedback (see Appendix 1) through facilitating focus groups with undergraduate and graduate students to gauge satisfaction with the selected virtual browsing platform and to inform enhancements. The sessions were facilitated by the Library's IT Librarian and the Metadata Strategist who were both heavily involved in implementation. They were able to immediately translate user questions and comments into setup adjustments and enhancement requests resulting in an improved user interface. The Syndetics Unbound team was also a truly collaborative partner as they were able to update their code to the specifics of Georgia Tech bibliographic descriptions to more effectively incorporate e-books into virtual browsing. The user feedback received was overwhelming positive, prompting the Library to select Syndetics Unbound as the virtual browsing solution provider.

Observing graduate and undergraduate students experiencing virtual browsing and discussing their impression during feedback gathering sessions informed better understanding of what users' expectations are for the virtual browsing platform and how it is used. These observations shaped the communication strategy to advertise and promote the new service. Post-implementation, a subject librarian used focus groups' feedback and implementation team insights to create a video tutorial to introduce the service to users.[8] As the Library continues the project lifecycle, the project team routinely gathers feedback to identify new needs and enhance the service as updates become available.

Library Next Project 2 – Enhancements to the Discovery Interface:

In many libraries, the pursuit of information literacy is a long-term and vital library instruction goal. As discovery tools become increasingly critical to libraries' functioning, it is worthwhile to examine how library instruction and discovery work together. As part of the Library Next five-year renewal process, the Georgia Tech Library implemented Primo as both a catalog interface and a discovery tool in 2016.

For this project, the Humanities & Science Fiction Librarian, who instructs introductory English classes, and the Metadata Strategist, who works directly with Primo and Alma, collaborated. Through their combined expertise, they were able to assess first-year students' experiences with the newly implemented discovery tool to make improvements both in teaching and to the interface itself.

Starting with the intention to learn how students use the tools available to them, and how the Library can help support these efforts through interface improvements and instruction, the need for a project based around assessments in library instruction classes was identified. This project began in January 2016, coinciding with many other changes at the Georgia Tech Library including the removal of much of the physical collection to a shared repository with Emory University, a major renovation of both library buildings, and new services to complement the new physical spaces. Due to these additional changes, Georgia Tech's Primo implementation was minimally customized, making it ideal to collect user feedback early in the process.

We selected first-year English classes as the focus group to evaluate Primo and Alma for several reasons. A review of the literature demonstrates that students early in their college experience often overestimate their comprehension of information literacy.[9] These students had not experienced the Georgia Tech Library's previous search interface, thus their feedback would be focused on their experience with Primo rather than a comparison of Primo with the earlier catalog. Also, like many libraries, the Georgia Tech Library's strongest teaching partnerships are with introductory humanities classes. The Marion L. Brittain Fellows, recent PhD graduates who refine their teaching and research during a three-year fellowship at Georgia Tech, are the instructors for English 1101 and 1102. They are creative teachers who utilize a multimodal curriculum represented by the acronym WOVEN (written, oral, visual, electronic and non-verbal communication) and were ideal collaboration partners for this project.

The research design sought to illuminate students' experiences with the discovery tool as well as to invite them to share their opinions about it. Using Qualtrics software to record their responses, the project team asked students to complete these six tasks in Primo (see Appendix 2):

- Search for a book by title
- Search for works by a specific author
- Search for a journal by name
- Find a newspaper article on a specific topic
- Search for works on a specific topic
- Search for a DVD by title

While the goals remained the same from class to class, the team was able to customize tasks to fit the class's research topic to make the experience more relevant to students and to increase instructors' buy-in. Students were also asked to complete the following survey questions:

- How often they use the catalog and for what purposes
- Their overall impressions of the interface
- What they like best about the interface
- Suggestions for changes
- How comprehensible the language on the interface was to them
- Whether they have requested items from the library service center
- Ratings for:
    - Ease of searching
    - Organization of search results
    - Relevance of search results
    - Aesthetic appearance of the website
    - An open response field for any additional comments

Both the tasks and the survey questions were distributed to students in a single assessment instrument. Students could choose to stop participating in the research at any time, and none of the questions were required to complete the survey.

This research was conducted in the Spring semester of 2017 and provided three different English 1102 classes the opportunity to participate. Of the pool of 104 students present in class on those days, 84 completed the assessment instrument. Since none of the questions were mandatory, the total number of responses to each question was used when analyzing the results.

The project team developed a rubric to grade the tasks and for questions with multiple parts and evaluated each part separately. Students were most successful at finding physical items using Primo, especially books and DVDs. Students found locating a digital newspaper article challenging, as well as determining the availability of electronic journal titles. In the survey questions, students reported low library usage, and a general favorable impression of the Primo interface (see Figure 3). Many also commented that they found it easy to use.

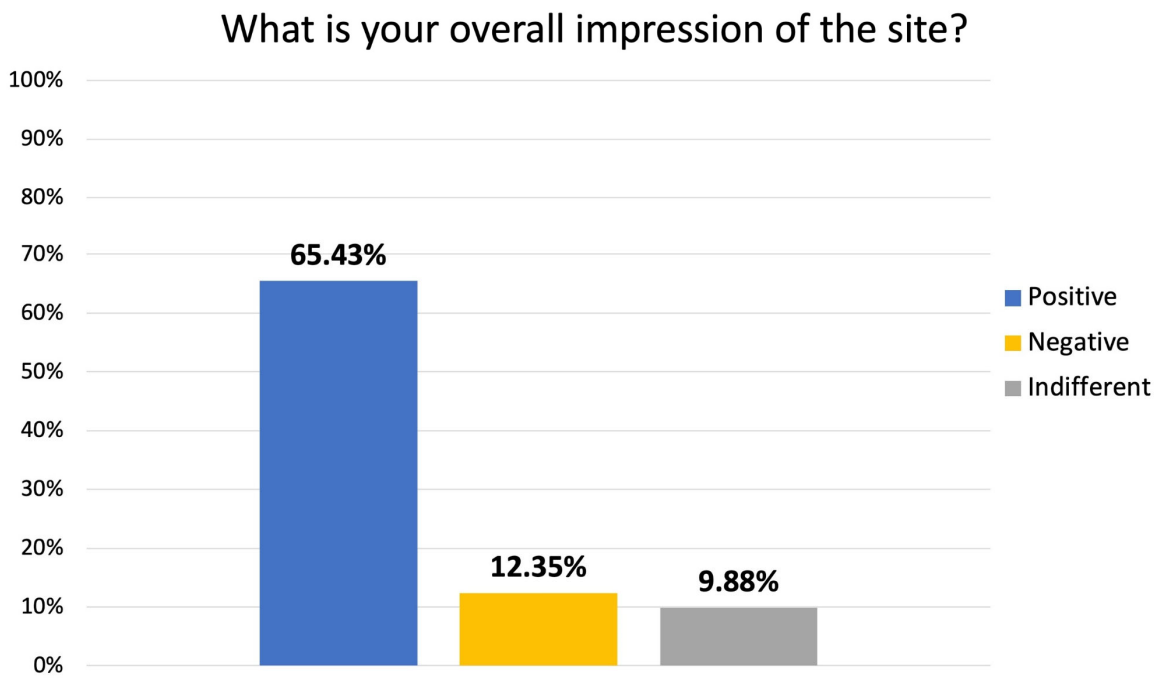

Figure 3 – Chart showing students satisfaction with the Primo interface.

In addition to adopting changes to instruction to guide students more effectively through scopes, the team shared the results of its research with the Library's Content Discovery Group that manages the Library's discovery interface and is responsible for making changes to it to ensure a positive user experience.

The results were also shared with the head of the Campus Engagement and Scholarly Outreach and with the Associate Dean for Learning and Research Services. In order to continue to strengthen the relationship with the first-year English program, the results and changes forthcoming were also shared with the Brittain Fellows whose classes participated, with the Director of the Writing and Communication program, and with the Chair of the School of Literature, Media and Communication.

The results of students' in-class exercises and comments combined with the feedback from meetings with librarians, library staff, and library undergraduate, graduate, and faculty advisory boards provided guidance on valuable improvements to the interface. Technical services and IT

librarians summarized the feedback and prioritized and implemented the updates, resulting in a more intuitive discovery interface. The team used Trello, a project management tool, to translate user feedback into an actionable list of catalog interface enhancements (see Figure 4) and to determine the order of priorities based on articulated user preferences and the complexity of implementing changes.

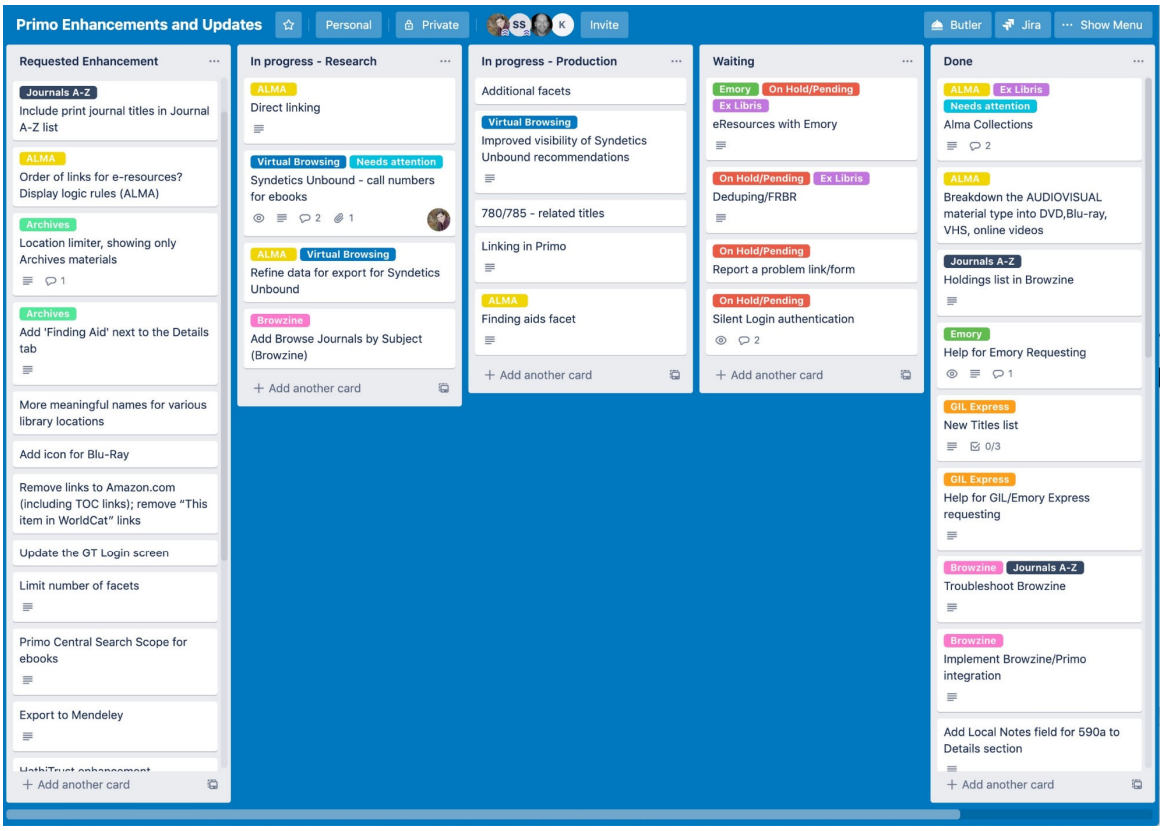

Figure 4 – Trello board used to translate user feedback into an actionable list of catalog interface enhancements.

This case study is a particularly good example of the importance of identifying all stakeholders early in the process and creating a communication plan specific to each internal and external stakeholder group. Through this project we taught undergraduate students about library catalog and resources, and instruction librarians were able to gain insight into student use of catalog, adjust their teaching strategies, and develop new training and promotional materials. The communication between the teaching faculty and the library helped to show faculty the impact of their feedback on the library systems and services. Technical services and IT librarians developed a better understanding of how to communicate system changes and limitations to their public services colleagues and that communication translated into better teaching and easier troubleshooting.

Library Next Project 3 - Single sign-on Authentication:

Of the three Library Next projects highlighted in this chapter, the migration to a new single sign-on authentication solution (OpenAthens) appeared to require the least feedback from end-users. Technical services and information technology staff relied on public services colleagues' expertise to provide internal stakeholders training and insight into end-users' behavior and expectations. Two sub-projects were initiated due to the diverse requirements for migrating to a different remote authentication system. The two sub-projects involved separate project teams, each with its own goals, charter and timeline, yet focused on the same outcome: the successful implementation of a single sign-on authentication system.

The first project team evaluated available technologies, collaborated with the selected vendor on the implementation, and completed a technical side of the migration process. It was apparent at the end of this first process that the success of the migration and the acceptance of the new authentication system by library stakeholders (faculty and students) required a good communication strategy and training of library frontline staff.

The second project team identified the training needs, created the training and communication plan, and produced patron-facing documentation. To ensure success of the project, it was imperative to collaborate with a colleague with experience in training and explaining difficult technical concepts to the library staff with minimal technical experience. A public services librarian with the knowledge of instructional design principles was an ideal choice.

The training strategy implemented by the team was two-fold. First, the library faculty advisory group was offered a preview of the new technology including an overview of the advantages of using it both to simplify the authentication process and to be able to collect more robust and granular usage data. For the initial meeting with the faculty stakeholders, we implemented a few resources on the new system to be able to offer a real-life experience and hands on demonstration. Involving library patrons early in the experience of the new technology helped to develop a staff training strategy as it highlighted the steps of the process that were not clear and were confusing to patrons. Conducting the training with different groups also helped with developing the communication plan and documentation. The frequently asked questions (FAQ) became a dynamic document that was updated after each training session.

Implementing the OpenAthens solution highlighted the importance of developing and executing a realistic project timeline with ongoing collaboration between project team members, the project team, and end users. Initial negative response from patrons helped the project team reevaluate the project timeline and analyze the shortcomings of the preliminary planning. For example, the project team didn't fully consider user behavior and pathways to library e-resources when they made decisions about implementing and introducing new authentication system.

To mitigate the situation, the project team requested that a public services librarian develop a short video explaining the reasons for migrating to the new technology and how to overcome the most common technical issues.[10] This project experience underscored the need for constant collaboration between technical and public services staff, where front-end staff contributes the knowledge and understanding of user needs and behavior and ability to explain technology in simple terms, while the technical services staff provide expertise to identify and implement improvements.

Conclusion:

Collaboration creates unique and valuable opportunities for continuous improvement spanning departmental lines as identified in the Library Next use case. As we implemented new services in newly renovated buildings with an off-site physical collection, we also learned the benefits of cross-functional collaborations in new ways. Our success depended on learning different ways to work together to support library users as they navigate the Library's new physical and digital landscapes.

As this use case demonstrates, there is something to learn from every project. In the virtual browsing project, technical services and Library IT made the Library's ~~print~~ collection accessible in an entirely new way. Making enhancements to the discovery interface allowed a liaison librarian and technical services to tailor the new catalog and discovery interface based on student feedback.

And working together to implement OpenAthens, the single sign-on authentication, included technical services, a public services librarian, and Library staff members.

Communication and information sharing are key elements of these cooperative efforts, demonstrating how common goals led not only to increased efficiency, but also to increased team efforts and morale. Ultimately, collaboration is the key to implementing improved services for 21st century library users.

Appendix 1:

[The form below was used to record users' feedback in the course of a trial subscription to Syndetics Unbound, which integrates with Primo.]

Browse Feature in Primo

Browse by subject and Browse by call number

TASK #1

- Go to: search.library.gatech.edu
- Locate the BROWSE SEARCH option in the top navigation
- Try these searches...
    - Subject: Electrical engineering
    - Call number: TK1 .I39

Is it helpful to see library materials displayed in that order?

Yes
No
Maybe

Why or why not?

Will you use the Browse feature?

Definitely yes
Probably yes
Might or might not
Probably not
Definitely not

Why or why not?

What is Syndetics Unbound?

Syndetics Unbound offers several virtual browsing options, including a "browse shelf" feature, "you may also like" recommendations and tagging. It provides users with an engaging, modern and convenient browsing experience for books and multimedia titles.

Task #2

Explore the following resources by performing searches via the Library Catalog (search.library.gatech.edu) and review the Syndetics Unbound features for each:

- Harry Potter and the Chamber of Secrets
- Harry Potter and the Chamber of secrets DVD
- Stumbling on Happiness

- Freakonomics
- Modernism Reborn: Midcentury American Houses
- Nanostructured Materials and Nanotechnology
- World Population a Reference Handbook

You can try your own searches via the Library Catalog (search.library.gatech.edu).

Which feature do you think is the most valuable? Why?

Which feature do you think is the least valuable? Why?

Did you run into any issues? Describe

If these features went away would you miss them?

Definitely yes
Probably yes
Might or might not
Probably not
Definitely not

Why or why not?

eBooks & Journals:

Do you expect eBooks to show up in the same list as print in both Primo Browse Search and Syndetics Unbound Browse Shelf?

Yes
No

Is it helpful to see the "Ebook" label in the Syndetics Full Shelf display?

Yes
No

Do you expect to see journals in the Browse Shelf display? Example: Search for: Journal of the Institution of Electrical Engineers

Yes
No

Appendix 2:

Karen Viars and Sofia Slutskaya, Co-Principal Investigators
Questions for IRB Protocol "How Undergraduate Students Use the Primo Catalog"

For questions 1-5 below, all information in brackets, such as [title] will be replaced with a title, author, etc., related to the research that each class is conducting in order to make the search experience relevant to the students.

1. **Find a known book, and determine if it is available.**
   Does GT Library have the book [Title]? Where is it located?
   Does GT Library have a book by [author]?

2. **Find a known e-journal and its availability**
   In Primo, look up the electronic journal called [Title]. What dates does the library have access to? List the databases in which you can find this journal.

3. **Use facets to limit to a specific format**
   Find an article on [relevant topic] from a newspaper, and list the name of the newspaper and date of the article below.

4. **Judging relevant books and articles.**
   Does the library have any books on [relevant topic].

5. **Limit format to [relevant topic] in facets. Limit to Available in Library**
   Does GT Library have any DVD's on the topic of [relevant topic]?

Survey questions:

1. How regularly do you use GT library catalog?
   a. Several times a week
   b. Once a week
   c. Several times a month
   d. Less than once a month
   e. Once a semester
   f. Less than once a semester
   g. Less than once a year

2. What are some of the things you have used GT library catalog for in the past?
   -Free response

3. What is your overall impression of the site?
   -Free response

4. If you could change something about the site, what would it be?
   -Free response

5. What do you like most about the site?

-Free response

6. Does the language that we use on the site make sense to you?
    a. Yes, I understand all of it
    b. I understand most of it
    c. I understand some of it, but some is confusing
    d. Most of it is confusing or makes it hard to find what I need
    e. All of it is confusing or makes it hard to find what I need

7. Have you requested an item for delivery from Library Service Center before?
    a. Yes
    b. No

8. Is there anything else you'd like to tell us or ask us about Primo or the library?
    -Free response

On a scale from 1 to 5, with 1 being the lowest score and 5 being the highest, rate your agreement with the following statements about the searching the GT Library Catalog:

1. The search function is easy to use.
2. The way the search results are organized on the page makes sense to me.
3. The search results I got are relevant and useful for my research.
4. I like the aesthetic appearance of the website

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[10] Georgia Tech Library, “How to Use OpenAthens,” n.d., https://youtu.be/6-TLLOUZD1o.